



Outbreak of Invasive Bacterial Meningitis Controlled

Producing Results

Careful monitoring and quick action, including timely and judicious administration of antimicrobial drugs and vaccinations to all close contacts of persons who had a confirmed or probable diagnosis of invasive bacterial meningitis, contained a serious outbreak of the disease. There were no fatalities, and no secondary cases were identified.

Public Health Problem

Within a nine-day period in February 2003, in a small town in Mississippi, six children aged 7-14 years had a confirmed or probable diagnosis of invasive bacterial meningitis. An infection of the spinal cord and fluid that surrounds the brain, bacterial meningitis is spread by exchange of respiratory and throat secretions. The disease has a fatality rate of 40 percent, and death often closely follows the onset of symptoms. In addition, bacterial meningitis profoundly affects the long-term health of survivors - 20 percent have permanent neurological deficits, including hearing loss, speech disorders, loss of limbs, mental retardation, and paralysis. Immediate identification and treatment of household members and persons who have had close contact with the patient are critical, because the risk of secondary transmission is 500-800 times greater for household members and close contacts than for the general population. .

Taking Action

The primary means of preventing secondary transmission of meningitis is timely and judicious use of antimicrobial drugs (antimicrobial chemoprophylaxis) by close contacts of infected persons. Mississippi's PHHS Block Grant provides \$170,000 in funds for diagnosis and treatment of meningitis. In this instance, determination of the pattern of disease outbreak was critical. The medical investigation indicated the following important findings: 1) All six persons with a diagnosis of invasive bacterial meningitis lived in a small town in Mississippi with a population of 15,000; 2) four of the six patients attended the same middle school; and 3) three of the six cases were confirmed by laboratory culture as serogroup C.

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Contact Information

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Mississippi

As a first step, the district epidemiology nurse, who started the investigation with the first patient, offered antimicrobial chemoprophylaxis to 85 close contacts. Rifampin was administered to 1,186 of the 1,384 students in the affected middle school and to 659 of the 786 students in affected elementary schools. After an additional four cases were detected through increased surveillance and after serogrouping was completed, meningococcal vaccine was obtained and offered to all students and staff in the affected school system.

Implications and Impact

Careful monitoring and quick action, including timely and judicious administration of antimicrobial drugs to all close contacts, and broad offering of vaccination throughout the affected school system, contained a serious outbreak. The case fatality rate was zero percent, and there were no secondary cases identified.

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